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Evaluation of the power of six clustering features in identifying a homogeneous disease subset in juvenile idiopathic arthritis (JIA)

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Background

The ILAR classification of JIA represents a work in progress. It has been suggested that patients with clustering features of early onset, female prevalence, asymmetric arthritis, positive ANA, and risk of iridocyclitis constitute a homogeneous entity, irrespective of the course of joint disease.

Objective

To compare power of each clustering feature in identifying a homogeneous disease subgroup in JIA.

Methods

All patients seen in study centers between 1983 and 2004 (N = 750) were classified according to ILAR criteria. Categories of systemic arthritis, RF-positive polyarthritis, and enthesitis related arthritis were excluded because it was felt they represent sufficiently homogeneous entities. Patients in the remaining categories (oligoarthritis persistent and extended, RF-negative polyarthritis, psoriatic arthritis and undifferentiated arthritis) were grouped together (N = 603). In each patient, the presence of the 6 clustering features was assessed. The relative power of each clustering feature in identifying a homogeneous disease subgroup was examined by assessing its ability to separate patients by the presence of the remaining clustering features.

Results

The ANA revealed the greatest power in separating patients with or without the other clustering features (see table 1), $p < 0.01$.

Conclusion

The ANA status revealed the strongest ability in identifying the disease subgroup characterized by the presence of clustering features. The optimal threshold for ANA positivity needs to be defined.

Table 1:

	ANA Pos	ANA Neg
Mean onset age (years)	3.9	6.8
Patients with onset age < 6 years (%)	81.3	45.9
Females (%)	80.0	68.8
Asymmetric arthritis at 6 months (%)	78.4	63.2
Iridocyclitis (%)	25.4	1.9